ACC.11
60th Annual Scientific Session & Expo

E881
JACC April 5, 2011
Volume 57, Issue 14

IMAGING AND DIAGNOSTIC TESTING

CHARACTERISTICS OF THOSE WITH SIGNIFICANT SUBCLINICAL ATHEROSCLEROSIS WITHOUT TRADITIONAL RISK FACTORS: THE DALLAS HEART STUDY

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Tuesday, April 05, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Advances in Noncoronary Applications of Cardiac CT
Abstract Category: 37. CT Coronary Calcium and Noncoronary CT Applications
Session-Poster Board Number: 1170-196

Authors: *Jacob P. Kelly, Nitin Gupta, Colby Ayers, Sandeep R. Das, Jarett D. Berry, Darren K. McGuire, James A. de Lemos, Amit Khera, The Department of Internal Medicine, Division of Cardiology, UT Southwestern Medical Center, Dallas, TX*

Background: We sought to determine the prevalence and characteristics of those with coronary atherosclerosis in the absence of traditional risk factors (TRF).

Methods: We analyzed data from 2,772 subjects ages 30-65 who had TRF measures and coronary calcium (CAC) scoring in the Dallas Heart Study. Significant CAC was defined as the sex/age (in 5-year increments) determined 75th percentile, with a minimum score of >10. Comparisons were made between those with and without significant CAC, excluding those with any TRF (hypercholesterolemia, HTN, DM, and current smoking).

Results: Of 403 participants in the cohort with significant CAC, 15.6% had no TRF. Among individuals without TRF (n=1135), those with CAC (n=63) were more commonly older, white and male than those without CAC (n=1072). In age, race and sex adjusted analyses, CAC trended towards an association with higher total cholesterol, metabolic syndrome and BMI, but not with other TRF levels (Table). CRP, Lp(a), and homocysteine did not associate with CAC, but LDL particle number, and novel biomarkers endothelial cell-selective adhesion molecule (ESAM) and LP-PLA2 did. MRI detected aortic atherosclerosis was also more common in those with significant CAC ($p<0.05$).

Conclusions: Among those with significant CAC, the absence of TRF is relatively common. Significant CAC without TRF is characterized by increased extra-coronary atherosclerosis, obesity factors and novel inflammatory biomarkers, but generally not with emerging RF or residual TRF levels.

Adjusted OR for Significant CAC in Subjects Without TRF

Variable	OR CAC> 75th %	95% CI	p-value
Total Chol*	1.30	0.99-1.70	0.06
LDL*	1.20	0.91-1.58	0.2
HDL*	0.89	0.65-1.21	0.4
Systolic BP*	1.29	0.97-1.74	0.09
BMI*	1.38	1.02-1.87	0.04
Metabolic Synd	1.78	0.98-3.26	0.06
Fam hx MI	1.48	0.84-2.59	0.2
CRP (log)*	1.19	0.86-1.56	0.3
Homocysteine (log)*	0.93	0.69-1.26	0.6
Lp(a) (log)*	0.97	0.74-1.27	0.8
LDL-particle #*	1.31	1.02-1.69	0.03
ESAM (log)*	1.33	1.00-1.76	0.05
LP-PLA2 activity*	1.31	0.99-1.73	0.06

Adjusted for age, sex, and race
*OR per 1 standard deviation of variable